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(54) **WIRELESS SENSOR SYSTEM AND BEARING DEVICE WITH WIRELESS SENSOR**

preload sensor which detects preload of bearings as the sensor parts 6A, 6B.

(57) Abstract:

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PROBLEM TO BE SOLVED: To provide a wireless sensor system which can be made with a lightweight and compact constitution, is easy to maintain and can communicate any time, while detection targets of the sensor system are vibration, temperature, load, torque or preload of bearings.

SOLUTION: This wireless sensor system is provided with wireless sensor units 4A, 4B and a sensor signal receiver 5. The wireless sensor units 4A, 4B are provided with following part; a sensor parts 6A, 6B which detect detection targets, sensor signal transmitting parts 9A, 9B which wirelessly transmit sensor signals outputted from the sensor parts 6A, 6B, and electric power receiving parts 8A, 8B which wirelessly receive operation electric power driving the sensors 6A, 6B and sensor signal transmitting parts 9A, 9B. The sensor signal receiver 5 has a sensor signal receiving part 13 and a feeding electric power transmitting part 12. This wireless sensor system is provided with at least one of a vibration sensor, a temperature sensor, a load sensor, a torque sensor and a

